💫 SKYHAWK ΑΓ

Video Optimized and Edge Ready



SEAGATE

Seagate<sup>®</sup> SkyHawk<sup>™</sup> AI 24TB is a video-optimized drive designed for NVRs, with artificial intelligence (AI) for edge applications.



3.5 HARD DRIVE DATA SHEET Smart. Safe. Secure.

## **Best-Fit Applications**

• Network video recorders (NVR)

Al-enabled NVR systems





## Key Advantages

ImagePerfect<sup>™</sup> AI firmware delivers zero dropped frames while supporting heavier workloads.

Versatile capabilities intelligently adapt to the scale of your AI environment, supporting up to 64 HD video streams and 32 AI streams.

SkyHawk Health Management actively helps protect your video storage by focusing on prevention, intervention, and recovery options.<sup>1</sup>

Class-Leading Reliability and Dependability SkyHawk AI drives are rated for up to 2.5M hours MTBF and a 550TB/year workload rate for more than 3x that of standard surveillance hard drives. Backed by a 5-year limited warranty.

Powerful processing to welcome workload challenges-SkyHawk AI supports video analysis and recording simultaneously with GPU analytics workloads.

Enjoy consistent performance with built-in rotational vibration sensors providing reliable storage for NVR with little lag or downtime.

Unlimited multi-bay support helps you meet your growing storage demands.

1 Contact your Seagate sales representative for further information.





Interface         SATA 6Gb/s         CMR         Unlimited         Unlimited <thu< th=""><th>Specifications</th><th>24TB</th><th colspan="2">20TB</th><th colspan="2">16TB</th></thu<>	Specifications	24TB	20TB		16TB	
Standard Model Numbers         ST24000VE002         ST20000VE002         ST16000VE002         ST16000VE002         ST16000VE002         ST16000VE002         ST16000VE002         ST16000VE004         ST20000007         ST20000007         ST20000007         ST2000000		24TB	20TB	20TB		
Interface         SATA 6Gb/s         CMR         CMR <thcmr< th="">         CMR         <thcmr< th="">         CMR</thcmr<></thcmr<>	Standard Model Numbers					ST16000VE002
Drive Design         Helium         Helium         Helium         Helium         Helium           FRatures and Performance         Unlimited         Unlimited         Unlimited         Unlimited         Unlimited           A Channels         32         32         32         32         32         32           A Real Time Capture Events/Sec 12         Up to 120	Interface	SATA 6Gb/s				
Fandbrinds and Partomanco         Unlimited	Recording Technology	CMR	CMR	CMR	CMR	CMR
Drive Bays Supported         Unlimited         Unlimited         Unlimited         Unlimited         Unlimited         Unlimited           Al Real Time Capture Events/Sec 12         Up to 120         Up to 64         Up to 65         Cache (MB)         285/272         285/272         Up to 280         286/272	Drive Design	Helium	Helium	Helium	Helium	Helium
Al Channels         32         32         32         32         32         32         32         32           Al Real Time Capture Events/Sec 1.2         Up to 120         Up to 96         Up to 64         Up to 65         Cacho (MB)         552/27         285/272         Up to 250         285/272         Up to 260         285/272         Up to 250         285/272	Features and Performance					
All Real Time Capture Events/Sec 12         Up to 120         Up to 36         S6	Drive Bays Supported	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
All Real Time Compare Events/Sec 1.2         Up to 96	AI Channels	32	32	32	32	32
HD Cameras Supported:         Up to 64	AI Real Time Capture Events/Sec 1,2	Up to 120				
NV Sensors         Yes         Yes <thyes< th=""> <thyes< th=""> <thyes< td=""><td>AI Real Time Compare Events/Sec 1,2</td><td>Up to 96</td><td>Up to 96</td><td>Up to 96</td><td>Up to 96</td><td>Up to 96</td></thyes<></thyes<></thyes<>	AI Real Time Compare Events/Sec 1,2	Up to 96				
Max Data Transter Rate (MB/s)         285/272         285/272         Up to 260         285/272         Up to 265           Cache (MB)         512MB         512MB         512MB         256MB         512MB         256MB           Rollability/Data Integrity         Tarnish Resistant         Yes	HD Cameras Supported	Up to 64				
Cache (MB)         512MB         512MB         512MB         512MB         512MB         256MB           Reliability/Data Integrity           Tarnish Resistant         Yes         <	RV Sensors	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity         Yes         Yes </td <td>Max Data Transfer Rate (MB/s)</td> <td>285/272</td> <td>285/272</td> <td>Up to 260</td> <td>285/272</td> <td>Upto 255</td>	Max Data Transfer Rate (MB/s)	285/272	285/272	Up to 260	285/272	Upto 255
Tarnish Resistant         Yes         Yes         Yes         Yes         Yes         Yes           Load/Unload Cycles         600,000         600,000         600,000         600,000         600,000         600,000           Nonrecoverable Read Errors Rate, Max         1 per 10E15	Cache (MB)	512MB	512MB	256MB	512MB	256MB
Lad/Uhlad Cycles         600,000         600,000         600,000         600,000         600,000         600,000           Nonrecoverable Read Errors Rate, Max         1 per 10E15         <	Reliability/Data Integrity					
Nonrecoverable Read Errors Rate, Max         1 per 10E15         <	Tarnish Resistant	Yes	Yes	Yes	Yes	Yes
Power-On Hours per year         8760         87	Load/Unload Cycles	600,000	600,000	600,000	600,000	600,000
Workload Rate Limit (WRL)	Nonrecoverable Read Errors Rate, Max	1 per 10E15				
Mean Time Between Failures (MTBF) (hours)         2500000hr         250000hr         2500hr         200hr         200hr <th< td=""><td>Power-On Hours per year</td><td>8760</td><td>8760</td><td>8760</td><td>8760</td><td>8760</td></th<>	Power-On Hours per year	8760	8760	8760	8760	8760
Warranty, Limited (years)         Andres         S <t< td=""><td>Workload Rate Limit (WRL) 4</td><td>550</td><td>550</td><td>550</td><td>550</td><td>550</td></t<>	Workload Rate Limit (WRL) 4	550	550	550	550	550
Rescue Data Recovery Services (years) <sup>6</sup> 3         3	Mean Time Between Failures (MTBF) (hours)	2500000hr	2500000hr	2500000hr	2500000hr	2500000hr
Power Management         2.0A	Warranty, Limited (years) 5	5	5	5	5	5
Startup Current, Typical (12V, A)         2.0A         2.0A         2.0A         2.0A         2.0A         2.0A         2.0A           Average Read/Write Power* (W) 7         7.8         7.8         7.8         7.72         7.8         8           Idle Average (W)         6.3W         6.3W         6.3W         3.54W         6.3W         5.3W           Standby Mode/Sleep Mode, Typical (W)         1.1/1.1W         1.1/1.1W         1.01W         1.1/1.1W         1.3/1.3W           Voltage Tolerance (SV)         ±5%         ±5%         ±5%         ±5%         ±5%           Voltage Tolerance (12V)         ±10%         ±10%         ±10%         ±10%         ±10%           Environmental/Temperature          5°C         5°C         5°C         6°C         6°C           Operating (Ambient, min °C)         5°C         5°C         5°C         6°C         6°C </td <td>Rescue Data Recovery Services (years) 6</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td>	Rescue Data Recovery Services (years) 6	3	3	3	3	3
Average Read/Write Power* (W) 7         7.8         7.8         7.2         7.8         8           Idle Average (W)         6.3W         6.3W         3.54W         6.3W         5.3W           Standby Mode/Sleep Mode, Typical (W)         1.1/1.1W         1.1/1.1W         1.01W         1.1/1.1W         1.3/1.3W           Voltage Tolerance (5V)         ±5%         ±5%         ±5%         ±5%         ±5%         ±5%           Voltage Tolerance (5V)         ±10%	Power Management					
Index output (v)         6.3W         6.3W         3.54W         6.3W         5.3W           Standby Mode/Sleep Mode, Typical (W)         1.1/1.1W         1.1/1.1W         1.01W         1.1/1.1W         1.3/1.3W           Voltage Tolerance (5V)         ±5%         ±5%         ±5%         ±5%         ±5%         ±5%         ±5%         ±5%         ±10% <td< td=""><td>Startup Current, Typical (12V, A)</td><td>2.0A</td><td>2.0A</td><td>2.0A</td><td>2.0A</td><td>2.0A</td></td<>	Startup Current, Typical (12V, A)	2.0A	2.0A	2.0A	2.0A	2.0A
Standby Mode/Sleep Mode, Typical (W)         1.1/1.1W         1.1/1.1W         1.01W         1.1/1.1W         1.3/1.3W           Voltage Tolerance (5V)         ±5%         ±10% <td< td=""><td>Average Read/Write Power * (W) 7</td><td>7.8</td><td>7.8</td><td>7.72</td><td>7.8</td><td>8</td></td<>	Average Read/Write Power * (W) 7	7.8	7.8	7.72	7.8	8
Voltage Tolerance (5V) $\pm 5\%$ $\pm 10\%$	Idle Average (W)	6.3W	6.3W	3.54W	6.3W	5.3W
Voltage Tolerance (12V)         ±10%         ±10%         ±10%         ±10%         ±10%         ±10%           Environmental/Temperature         Environmental/Temperature	Standby Mode/Sleep Mode, Typical (W)	1.1/1.1W	1.1/1.1W	1.01W	1.1/1.1W	1.3/1.3W
Environmental/Temperature           Operating (Ambient, min °C)         5°C         5°C         5°C         6°C         0°C           Operating (Ambient, min °C)         5°C         65°C         740°C         -40°C         -40°C <td< td=""><td>Voltage Tolerance (5V)</td><td>±5%</td><td>±5%</td><td>±5%</td><td>±5%</td><td>±5%</td></td<>	Voltage Tolerance (5V)	±5%	±5%	±5%	±5%	±5%
Operating (Ambient, min °C)         5°C         5°C         5°C         5°C         0°C           Operating (drive reported, max °C) <sup>®</sup> 65°C	Voltage Tolerance (12V)	±10%	±10%	±10%	±10%	±10%
Operating (drive reported, max °C)®         65°C	Environmental/Temperature					
Nonoperating (ambient, min °C)         -40°C         <	Operating (Ambient, min °C)	5°C	5°C	5°C	5°C	0°C
Physical           Height (mm/in, max)         26.1mm/1.028in         26.11mm/1.028in         101.85mm/4.01in	Operating (drive reported, max °C) 8	65°C	65°C	65°C	65°C	65°C
Height (mm/in, max)         26.1mm/1.028in         26.1mm/1.028in         26.11mm/1.028in         101.85mm/4.010in         101.85mm/4.	Nonoperating (ambient, min °C)	-40°C	-40°C	-40°C	-40°C	-40°C
Width (mm/in, max)         101.85mm/4.010in         101.85mm/4.01in         101.85mm/4.010in	Physical					
Depth (mm/in, max)         147.0mm/5.787in         147.0mm/5.787in         146.99mm/5.787in         147.0mm/5.787in           Weight (g/lb, typical)         685g/1.51lb         685g/1.51lb         680g/1.499lb         685g/1.51lb         670g/1.477lb           Carton Unit Quantity         20         20         20         20         20	Height (mm/in, max)	26.1mm/1.028in	26.1mm/1.028in	26.11mm/1.028in	26.1mm/1.028in	26.11mm/1.028in
Weight (g/lb, typical)         685g/1.51lb         685g/1.51lb         680g/1.499lb         685g/1.51lb         670g/1.477lb           Carton Unit Quantity         20         20         20         20         20         20	Width (mm/in, max)	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.01in	101.85mm/4.010in	101.85mm/4.01in
Carton Unit Quantity 20 20 20 20 20 20	Depth (mm/in, max)	147.0mm/5.787in	147.0mm/5.787in	146.99mm/5.787in	147.0mm/5.787in	146.99mm/5.787in
	Weight (g/lb, typical)	685g/1.51lb	685g/1.51lb	680g/1.499lb	685g/1.51lb	670g/1.477lb
Cartons per Pallet/Cartons per Layer         40/8         40/8         40/8         40/8         40/8	Carton Unit Quantity	20	20	20	20	20
	Cartons per Pallet/Cartons per Layer	40/8	40/8	40/8	40/8	40/8

1 Events can be human, vehicle, or object capture.

2 Tested and verified using embedded AI NVR - 64-ch HD recording, 16-ch PB. Average picture size ~250 KB

3 1080P, H.265, 25 fps

4 SkyHawk Al surveillance drives are designed for always-on workloads of 550TB/year. For higher transaction workloads, see Seagate's enterprise-class drive offerings.
 5 -year limited warranty applies to product shipped after July 3, 2021. Check with your reseller on more information.
 6 From May 1, 2020, 3-year Rescue Data Recovery Services plan may be offered in addition to standard warranty. This is offered for selected regions only. Check with reseller on availability.

7 .Based on IDEMA three stream workload

8. Seagate does not recommend operating at sustained extreme temperatures. Operation at high temperatures will shorten product life.





Specifications	12	2TB	10TB	8TB	
Capacity	12TB	12TB	10TB	8TB	
Standard Model Numbers	ST12000VE003	ST12000VE001	ST10000VE001	ST8000VE001	
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	
Recording Technology	CMR	CMR	CMR	CMR	
Drive Design	Helium	Helium	Air	Air	
Features and Performance				_	
Drive Bays Supported	Unlimited	Unlimited	Unlimited	Unlimited	
AI Channels	32	32	32	32	
AI Real Time Capture Events/Sec 1,2	Up to 120	Up to 120	Up to 120	Up to 120	
AI Real Time Compare Events/Sec 1,2	Up to 96	Up to 96	Up to 96	Up to 96	
HD Cameras Supported <sup>3</sup>	Up to 64	Up to 64	Up to 64	Up to 64	
RV Sensors	Yes	Yes	Yes	Yes	
Max Data Transfer Rate (MB/s)	285/272	Up to 255	Up to 255	Up to 255	
Cache (MB)	512MB	256MB	256MB	256MB	
Reliability/Data Integrity		·			
Tarnish Resistant	Yes	Yes	Yes	Yes	
Load/Unload Cycles	600,000	600,000	600,000	600,000	
Nonrecoverable Read Errors Rate, Max	1 per 10E15	1 per 10E15	1 per 10E15	1 per 10E15	
Power-On Hours per year	8760	8760	8760	8760	
Workload Rate Limit (WRL) 4	550	550	550	550	
Mean Time Between Failures (MTBF) (hours)	2500000hr	2500000hr	2000000hr	2000000hr	
Warranty, Limited (years) 5	5	5	5	5	
Rescue Data Recovery Services (years) 6	3	3	3	3	
Power Management					
Startup Current, Typical (12V, A)	2.0A	2.0A	2.0A	2.0A	
Average Read/Write Power * (W) 7	7.8	8	9	8.8	
Idle Average (W)	6.3W	5.3W	7.4W	7.4W	
Standby Mode/Sleep Mode, Typical (W)	1.1/1.1W	1.3/1.3W	1.0/1.0W	1.0/1.0W	
Voltage Tolerance (5V)	±5%	±5%	±5%	±5%	
Voltage Tolerance (12V)	±10%	±10%	±10%	±10%	
Environmental/Temperature				_	
Operating (Ambient, min °C)	5°C	0°C	0°C	0°C	
Operating (drive reported, max °C) 8	65°C	65°C	65°C	65°C	
Nonoperating (ambient, min °C)	-40°C	-40°C	-40°C	-40°C	
Physical	· · · · · · · · · · · · · · · · · · ·	·			
Height (mm/in, max)	26.1mm/1.028in	26.11mm/1.028in	26.11mm/1.028in	26.11mm/1.028in	
Width (mm/in, max)	101.85mm/4.010in	101.85mm/4.01in	101.85mm/4.01in	101.85mm/4.01in	
Depth (mm/in, max)	147.0mm/5.787in	146.99mm/5.787in	146.99mm/5.787in	146.99mm/5.787in	
Weight (g/lb, typical)	685g/1.51lb	670g/1.477lb	720g/1.59lb	720g/1.59lb	
Carton Unit Quantity	20	20	20	20	
Cartons per Pallet/Cartons per Layer	40/8	40/8	40/8	40/8	

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